Interagency Coordinating Council (ICC) on Early Intervention Meeting

October 20, 2022





Housekeeping



Interpretación en español: haga clic en el globo blanco en la parte inferior de la pantalla con la etiqueta "Interpretation." Luego haga clic en "Spanish" y seleccione "Mute original audio."



ASL interpreters have been "Spotlighted" and live closed captioning is active



This meeting is being recorded

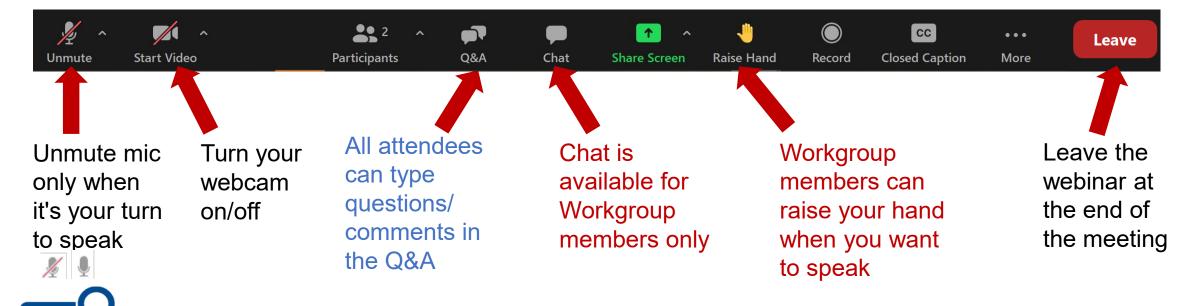


Materials are available at: https://www.dds.ca.gov/services/early-start/state-icc-on-early-intervention-overview/



Submit written comments via email to: earlystart@dds.ca.gov

Zoom Tips



- For attendees, your video and microphone will not be available
- You will only see/hear workgroup members, DDS staff and presenters on screen
- Features will vary based on the version of Zoom and device you are using
- Some Zoom features are not available for telephone-only participants

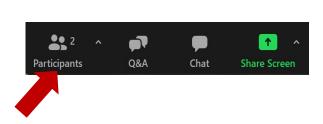
Providing Comments- Appointed Members

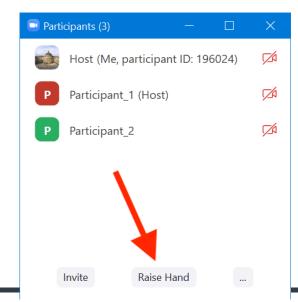
Appointed Members: Please use the "Chat" or "Raise Hand" to comment



You may need to click on "Participants" and a new window will open where you can

"Raise Hand"





Agenda

- I. Opening: Welcome and Roll Call
- II. Approval of Minutes
- III. Review ICC Mission and Purpose
- IV. Part C Literacy Article and Introduction of Meeting Theme
- V. DDS Updates and Information
- VI. Voices from the Field
- VII. Presentation- FRCNCA- ARPA Initiative on Diversifying the ICC

Break

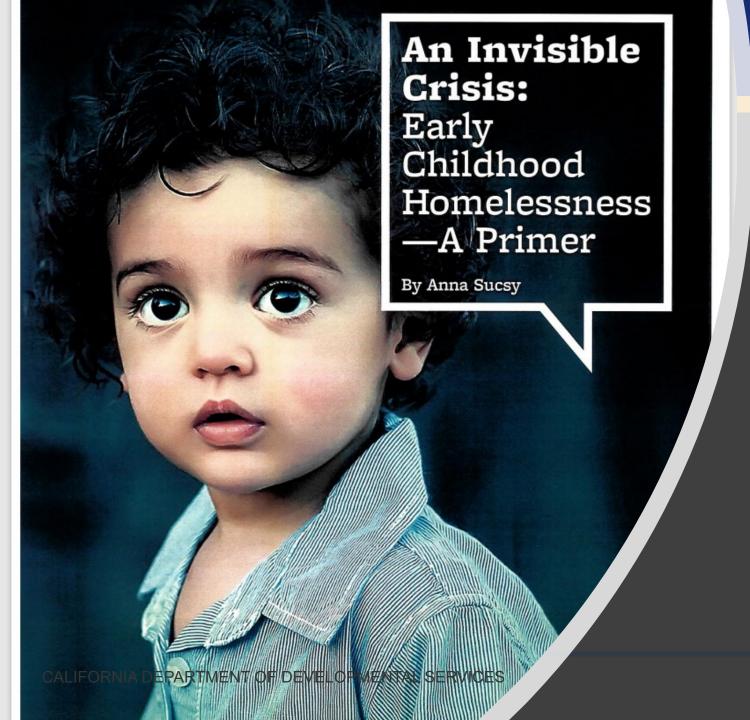
- VIII. Presentation- Bunker Babies- Review of Preliminary Research on the Effects of COVID-19 on Young Children's Development
- IX. Public Input

Lunch

- X. Announcement of Subcommittee Composition and Goals
- XI. Subcommittee Meetings

ICC MISSION AND PURPOSE

To promote and enhance a coordinated family service system for infants and toddlers, ages birth to three years, who have, or are at risk for having a developmental delay or disability, and their families, by utilizing and encouraging a family-centered approach, family-professional partnerships, and interagency collaboration.



PART C LITERACY ARTICLE

DDS Updates and Information

Nancy Bargmann- Director, DDS Maricris Acon- Deputy Director, DDS

Voices from the Field Updates

Karen Moran Finello- Statewide Screening Task Force
Fran Chasen- Infant Development Association of CA
Teresa Anderson- The Arc
Marty Omoto- California Disability Community Action Network

Presentation

FRCNA ARPA Initiative: Diversifying the ICC

Robert Rochin

ARPAFOR PART C FUNDING

FRCNCA PROPOSAL FOR ICC CAPACITY & DIVERSIFICATION INITIATIVE

Background



1

AMERICAN RESCUE PLAN ACT (ARPA) provided one-time supplemental funds for IDEA Part C

2

Identified Need: The ICC wants to increase diverse representation, expertise, and community involvement

ARPA ICC PROJECT

The goal of this initiative is to provide support to the state's ICC through outreach activities, recruitment, training, and incentives to parents and community members to participate in ICC activities at the statewide and local level through local interagency coordinating council areas (LICA).



FRCNCA PARTNERS



Eastern LA FRC, Project Lead



CARE Parents Network Northern Regional lead



LOCAL COMMUNITY ENGAGEMENT ACTIVITIES

- Identify resources or connections for leveraging outreach to underrepresented communities not involved with the ICC.
- Gather information regarding opportunities and barriers from the ICC, LICAs, Regional Centers, and other existing early childhood community groups (surveys, focus groups, or key informants) to:
 - Identify target populations, cultural or linguistic groups needed to build the capacity of the ICC
 - Identify opportunities to create connections for leverage, engagement, and training implementation
 - Engage in local outreach activities/strategies to inform selected communities

FRCNCA PARTNERS LOCAL COMMUNITY ENGAGEMENT ACTIVITIES (Continued)



Eastern LA FRC, Project Lead



CARE Parents Network Northern Regional lead

- Develop resources to recruit providers, community representatives, and families to participate in ICC statewide or with the local interagency council or similar.
- Develop a report of recommendations to the Department and ICC to support the implementation for recruitment, engagement, family friendliness and mentorship of new members from under-represented communities.

15

Parents Helping Parents of SLO Southern Regional Lead

LOCAL COMMUNITY ENGAGEMENT ACTIVITIES (CONTINUED)

FRC Engagement

Identify communities not involved in the ICC, why, and recommendations to help ICC be prepared to receive new family and community members

Develop an outreach/engagement plan and tools for selected communities and populations

Use an RFP process to involve FRCs in targeted underserved and underrepresented communities

LOCAL COMMUNITY ENGAGEMENT ACTIVITIES (CONTINUED)

6 FAMILY RESOURCE CENTERS

Target communities where no LICA exists with T/A supports and "Leading by Convening" tools to establish a local interagency council or similar group that has governing bylaws and its framework similar to the state's ICC

8 FAMILY RESOURCE CENTERS

Target existing LICA to support the mentoring of parents to elevate to state-level ICC

LEADERSHIP DEVELOPMENT

- •Training development and implementation for families and providers in the community to ensure successful and meaningful participation in ICC activities statewide and locally.
- •Develop training modules for community, family members/consumer parents interested in participating in Local or State ICC activities utilizing leadership trainings like Partners in Policymaking and Project Leadership.

LEADERSHIP DEVELOPMENT

- Finalize a model for implementation of training Statewide
- Develop a Post training mentoring plan by the regional leads, mini grantees, with incentives for engagement for the new family/community representative ICC members
- Identify local Early Start FRCs that might provide in-kind support/mentoring

WHAT'S NEXT?

PHASE I

Identify resources or connections for leveraging outreach to underrepresented communities not involved with the ICC by gathering information regarding opportunities and barriers from the ICC, LICAs, Regional Centers, and other existing early childhood community groups through surveys, focus groups, or key informants.



BREAK

Presentation

Bunker Babies:

Review of Preliminary Research on the Effects of COVID-19 on Young Children's Development

Tracey Tasker

Bunker Babies: The effects of Covid 19 on young children's development

Tracey Tasker, MBA, MA, CCC/SLP

October 20, 2022

tetaskerslp@gmail.com





International data on delays

- University of Calgary in Canada compared developmental screening using ASQ3 of 1,623 1-year-old infants born between April 2020 to November 2020 to infants born prepandemic (Giesbrecht et al. 2022)
 - Infants born during the pandemic had lower mean scores relative to pre-pandemic infants in all domains except problem-solving.
 - Infants had a significantly higher risk for developmental delay in the communication and person-social domains for scoring 2 standard deviations below the mean.
- UK Government education inspectorate Ofsted based on a small sample of 70 early year providers reported
 - Delays in speech and language with limited vocabulary and adverse social skills
 - Regressions in independence and self-care skills
 - Delays in crawling and walking
 - Toddlers and preschool children needed extra support with sharing and taking turns





Developmental Delays

- Columbia University Irving Medical Center study of 255 infants born between March and December 2020, parents completed a 6-month ASQ-3 assessment (Shuffrey et al. 2022)
 - Exposure to maternal SARS-CoV-2 infection was not associated with differences on any ASQ subdomain at 6 months
 - Both exposed and unexposed infants born during this period had significantly lower scores on gross motor, fine motor, and person-social subdomains compared with infants born before the pandemic.
- Southern Illinois University, assessed (6, 12,18, 24, and 36-month intervals) pre-pandemic and post-pandemic ASQ3 scores for 1,024 children distributed among 2 pediatric practices (Imboden et al. 2021)
 - There were no significant differences in aggregate scores for the overall sample
 - There were statistically significant differences in domain scores by age
 - Postpandemic problem-solving scores decreased among 6-month-olds while increasing among 24-month-olds
 - Slight decrease in post-pandemic scores in the communication domain among 6- and 12-month olds

"If our data were to generalize to all the babies born during the pandemic, that could mean something líke a tríple increase in babies that need to be referred for Intervention" Daní Dumitriu, Columbia university



Language Development across the globe during lockdown

- Vocabularies of 1,742 children between 8 to 36 months(68% of the sample were below 24 months of age) across 13 countries and 12 languages were evaluated at the beginning and end of the first lockdown period (in each country) from March to September 2020 using the MacArthur Bates CDI (Kartushina et al. 2022)
 - Children who had <u>less passive screen exposure</u> and <u>whose caregivers read more to</u> <u>them</u> showed <u>larger gains in vocabulary development</u> during the lockdown, after controlling for SES and other caregiver-child activities.
 - Children with no exposure to screens were reported to have the largest vocabulary gains relative to norms
 - Children with less passive screen exposure showed greater gains in expressive, but not receptive vocabulary
 - The time spent on shared book reading significantly correlated with gains in receptive vocabulary, but not expressive vocabulary
 - Children gained more words than expected (norms) during the lockdown, which authors attribute to "faucet" moments when shared aspects of the child's environment are removed(e.g. childcare) and the home environment is particularly important for development.



33.9% of parents in California read to their baby every day, which is lower than the national average of 36.8% (State of Babies 2022, Zero to Three)





Developmental Delays and Research into the Causes

- Brown University study of 39 children enrolled in longitudinal study prior to the pandemic (January 2019) to 188 children born after July 2020 using Mullen Scales. (Deoni et al. 2021)
 - Cognitive scores were significantly reduced during the pandemic by 27 to 37 points (almost 2 standard deviations)
 - Significantly reduced verbal, motor, and overall cognitive performance
 - Research recorded parent-child interactions at home and found the number of words spoken by parents to their children, and vice versa (child vocalizations) and overall conversational turn taking in the past 2 years has been lower than in previous years
 - The differences in vocalizations and turns were greatest among children from families in the lowest SES quartile. For example, child vocalizations among the lowest SES group decreased from the 49th to 25th percentile.





Covid-19 reduced turn-taking in child care as well as homes

- Data from LENA grow which includes 5,000 educators across 29 states and three countries.
- Turns dropped by about 8 per hour, a nearly 40% reduction from before the pandemic
- Based on survey data the factors that reduced focus on interactions
 - Mask protocols
 - Concerns about exposure to Covid
 - General stress and uncertainty



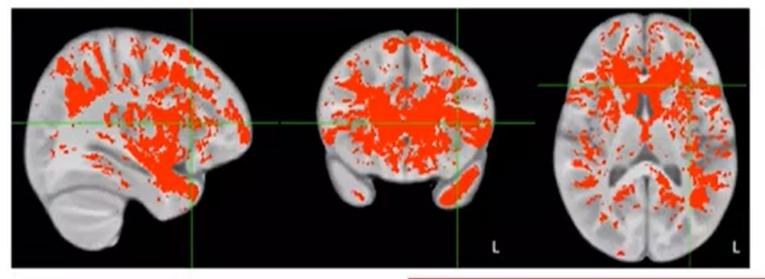
Longitudinal study found a "key window" for turn-taking at 18 to 24 months for predicting higher IQ scores, verbal comprehension, vocabulary and other language skills in adolescence (Gilkerson et al. 2018)



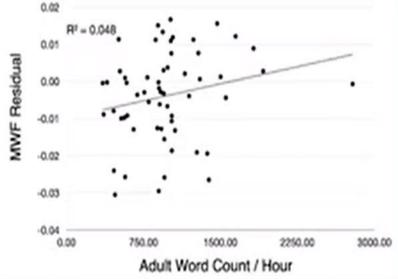
Language Environment & Early Brain Development

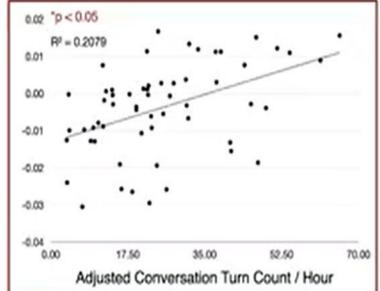


Significant associations only found between brain and conversational turns and not total word exposure.



Do COVID babies
"talk" less:
Research
findings and
potential
implications
LENA webinar





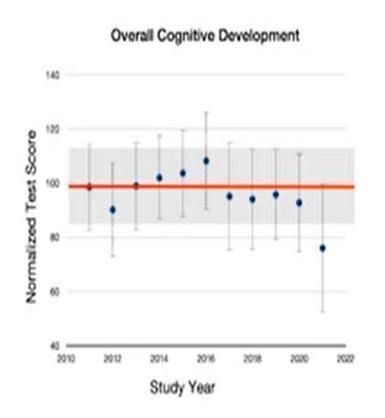


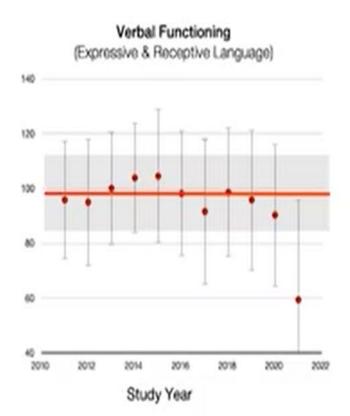
- This study found that, controlling for prior socioemotional competence, the number of turns in infants' language environment predicted their socioemotional skills at 30 months.
 - Emotional regulation: in the final model, 7.0% of the variance is explained by conversational turns above child vocalizations, controls (maternal warmth and cumulative social risk), and emotional regulation at 18 months (change in F = 4.039, gl = 1 and 37, p = 0.052).
 - Attachment and relationships: in the final model, 7.7% of the variance is explained by conversational turns, above child vocalizations, controls, and attachment at 18 months (change in F = 4.705, gl = 1 and 37, p = 0.037).
 - Emotional communication: in the final model, 11.4% of the variance is explained by conversational turns above child vocalizations, controls, and emotional communication at 18 months (change in F = 6.413, gl = 1 and 37, p = 0.016).
- A cross-lagged analysis showed that paths from turns to socioemotional competence were significant but NOT the reverse.
- Results suggest that non-semantic aspects of the linguistic environment can contribute to children's socioemotional development.

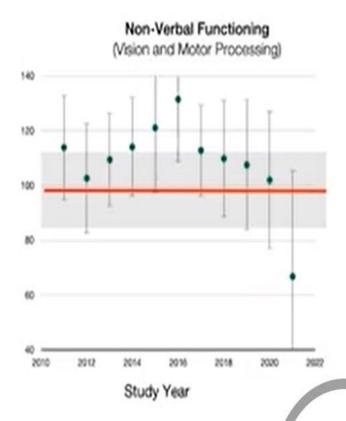
Source: LENA webinar, Esteban Gomez, April 201

Disproportionate Impact on Infants

- Focusing only on infants, 0-1.4yrs, born prior to Jan 2019 or after July 2020.
- 137 infants born during pandemic; 558 before pandemic







*2021 measures are significantly lower (p<0.001) than any other year in the past decade.

An average decrease of 33 points across the composite values.

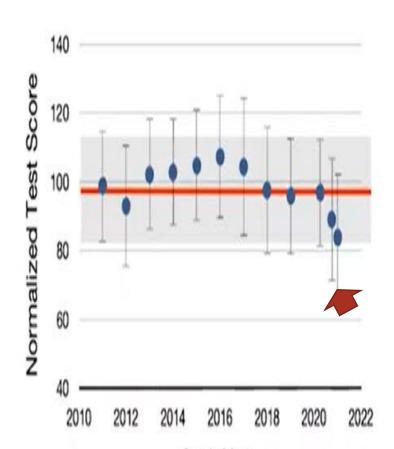
· Mean composite scores from a standard assessment tool (Mullen Scales of Early Learning) calculated per year

• 783 children (401 female), 3-months to 3-years of age, 1348 total measures.

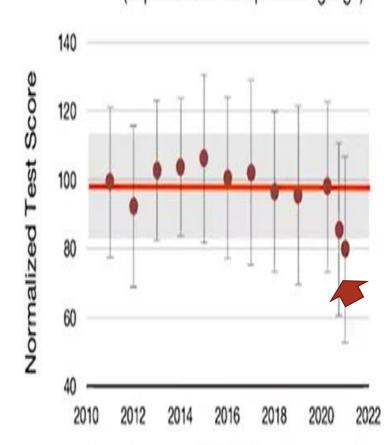
Do COVID babies "talk" less: Research findings and potential implications

Lena webinar

Overall Cognitive Development

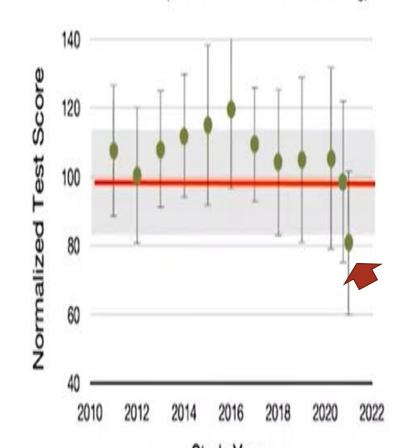


Verbal Functioning (Expressive & Receptive Language)





Non-Verbal Functioning
(Vision and Motor Processing)



Long Term Outcomes?

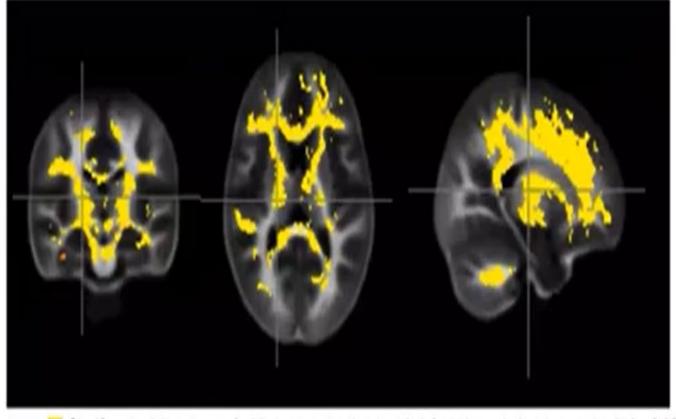


Early longitudinal trends are worrisome.

Age in months

Pre-COVID

....and so are neuroimaging results.



Significantly delayed rate of white matter development in infants born during the pandemic (p<0.05 FDR).</p>

Do COVID babies "talk" less: Research findings and potential implications, LENA webinar

Did we miss screening during key windows?

- Over 26% of US households with children reported missing, skipping or delaying preventative visits in 2020 because of Covid (Lebrun-Harris, Public Health Reports 2022)
 - Missed or delayed visits were significantly higher among respondents who were not caught up on rent/mortgage and among respondents who reported children were not eating enough in the last 7 days because of affordability
 - Californians missed more than the national average at 29.9% (the range missed was from 17.9% to 37%)
 - California was already poor at screening with only 1 in 5 children under 4 receiving all 3 recommended screenings in 2019; a 21% screening rate was significantly below the national median of 33% (source: www.calhealthreport.org)
 - Wellness checks for **children 18 months to 5 years old were missed the most** (Rapid EC Survey 10/13/20)
 - Recently released data by DHCS reports that only 26% of children in Medi-Cal received at least six of the eight AAP recommended well visits between 0 to 15 months and only 25% were developmentally screened in the last 12 months before their first, second or third birthday



Delays in well-child visits mean missed identification of developmental delays during wellness screenings as well as opportunities to observe signs of child abuse and neglect





CDC new language milestones "miss" the critical window

CDC added a milestone 50 words at 30 months. It is in the WRONG PLACE. Children should have 50 words by 24 months and acquiring the corpus of 50 words is correlated with the ability to combine words

Normative evidence finds that the standard deviation (variation or range of when children learn) sharply declines between 18 and 24 months which is why 24 months is when we can "meaningfully" identify late talkers

12 months Calls mama or dada

15 months CDC: 1 or 2 words besides mama or dada

MCDI: 7 words

18 months CDC: Tries to say 3 or more words besides

MCDI: 37 words

mama/dada

24 months CDC says at least 2 words together

MCDI: 156 words

CDC decreased number of words children should be saying at 18 months, right when vocabulary spurt is happening!



MCDI: over 400

words



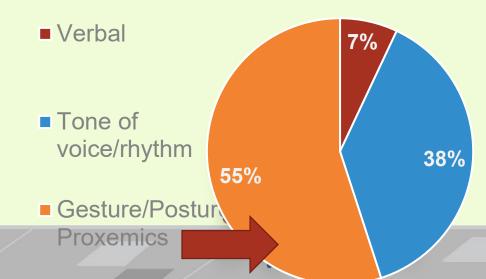


Could Proxemics Be a Factor?

- Social distancing between staff and parents resulted in distance from the children as children perceived the distance between parents and staff as a sign of distrust and consequently this negatively impacted the child-staff relationship (source: Lund University, Sweden online survey among 382 preschool staff between January to March 2021 (Andersson et al. 2022)
- 31% of 1,000 UK parents of children under 5 reported their children experienced anxiety when saying goodbye and 74% believed that this was made worse by the pandemic (source: Fisher-Price Play Lab and Family Action UK)
- Children don't really start to understand social distancing until about 3 years old, children younger than 3 need physical contact for healthy development (Source: frey, Duke University Early Experience and Prain Lab, Family interview 3/27/20)

- Children increase their distance from adult caregivers with age, while they decrease their distance to playmates (Wesley 1982, Burgess &McMurphy 1982)
 - Infants 6 to 18 months stayed close to caregivers while toddlers and preschoolers moved closer to peers.
 - Research shows that preschoolers (4-to-5-year-olds) proxemic behavior is affected by their need to belong (Marinovic et al. 2017) and they understand that close distance means friendly (Melson 1976) and they make predictions of other's behavior, they also expect people to keep a closer distance than adults (Paulus 2018)

Communication





What About Mask Wearing During Sensitive Periods in Development?

• Kang Lee, applies psychologist who studies facial recognition in kids (NYTimes, Klass, 9/14/20) identified developmental risks for facial processing, emotional recognition, social referencing and speech recognition

• 1)Facial processing/recognition skills

- For infants to track a human face in the first few hours of life, the aspects of the features themselves are important, preferential tracking decreases in the second month (Johnson et al. 1991)
- Exposure to a variety of facial features and emotional expression during sensitive periods of development is crucial for the specialization of brain networks (Johnson 2005)
- Between 4 and 10 months babies make a perceptual shift from processing individual features independently (featural processing) to configured processing where they process the face holistically (Schwarzer et al. 2007)

• 2)Social referencing and emotional recognition

• Social Referencing: for infants and young children to feel safe there is a heavy dependence on facial expressions as they rely on their parents' emotional cues via facial expressions to regulate their responses to novel people and environments (Kurz and Hadani 2020)

 Emotional recognition: Some studies found that happiness and sadness are mostly expressed by the lower part of the face (Fishcer et al.; Kret & de Gelder 2021) whereas other studies found that children can identify emotions
 based on the eye regions alone (Ruba & Pollak, 2020)

Speech perception and language development

- At 4 months old, infants look longer at the eyes then a shift takes place at 8 months old, they look longer at the mouth, then another shift takes place at 12 months where they look equally at both the eyes and mouth, coinciding with competence in their native language
 - Research found that infants who looked more at their mother's talking mouth at 6 months scored higher on expressive language, size of vocabulary and socialization at 24 months of age
- Bilingual infants rely more on audiovisual speech cues (look longer at the speaker's mouth) than
 monolingual infants who shift their attention from the mouth at 8 months to both the eyes and
 mouth at 12 months *
 - *Nearly sixty percent of children five and under in California live in homes where a language other than English is spoken.
- Autistic children studied at 2 years old tended to look more at a speaker's mouth than the eyes unlike typically developing toddlers
- Autistic children tend to focus more on the mouth and less than the eyes than typically developing children in recognizing expressions of happiness and anger (Tanaka et al. 2012)
 - *As we know CA has about 133,000 autism cases, about 70% of all intakes are now autism cases.

: Lekowicz & Hensen-Tift 2012)





Impact of face masks on DHH children

- Thirteen children (3 to 7 years old) watched a recording of words spoken with no mask, a surgical mask, a face shield, and a clear mask (Lipps et al. 2021)
 - Word recognition was significantly poorer for surgical masks and transparent face shields (apron masks) but ClearMask was equal to no mask in quiet space
 - This study replicated an earlier study (Lalande et al. 2021) with older children (7 to 18-year-olds) who found that children who are DHH (Deaf/Hard of Hearing) benefitted more from visual cues with clear masks, and audiovisual speech perception was the least affected by transparent masks.
 - haCnge of attenuation from 4dB increases from a basic medical mask increase to 12 dB for N95 masks, this small change can be significant for speech understanding for a DHH child. The attenuation combined with the loss of audiovisual cues (lip reading) can significantly affect speech perception. These visual cues are particularly important during critical periods of speech and language development. (Charney et al. 2020)

Children do not have the context to "fill in the gaps" for missed auditory information. Compared to adults, all children need a quieter listening environment to develop neural maps.

Poor acoustic environments prevent sound from reaching the brain. Children cannot listen as well as adults because the human auditory structure is not fully mature until 15 years old.





Parents of Children with Disabilities – More Stress During Covid

- Families with children with a disability reported higher levels of emotional difficulty (US DHHS, 8/21)
- Families with a child with a disability were more likely to experience an interruption in child care during the pandemic
 - <u>Families with a child with special needs</u> have disproportionately greater challenges including higher rates of material hardship, higher rates of emotional distress for both parents and children and higher healthcare disparities (RAPID-EC Survey, Fisher et al., 4/27/21)
 - Globally (N=25,000, Save the Children Covid Hidden Impact Survey, 11/21) survey found that 82% of caregivers of children with disabilities
 reported reduced psychological well-being since



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- Covid

- Next to Washington DC, California was the state with the largest yr.-over-yr. decline in employment among mothers with children younger than 5 years (4/20 to 4/21)
- California ranked as one of the least affordable states for licensed care for parents even before the pandemic started (Child Care Aware 2018)
- Variability in childcare is linked to less secure attachment behaviors with mothers (Suwalsky et al. 1993)
- Instability in childcare is associated with problematic behavior at age 4 and in first grade and negatively associated with social adjustment in PreK (Howes & Hamilton 1993, Bacharach and Baumeiser 2003, Bratsch-Hines et al. 2015)
- Daycare stability between 2.5 to 4 yrs. old was positively related to school readiness among low-income children (Loeb et al. 2004)
- Changes in the number of caregivers predicted increased problem behavior and decreased prosocial actions (Morrisey 2009)

Impacts of Covid to Families with Autistic Children

- Global literature review found as parents' stress increased they reported higher rates of social harm, depression, and anxiety that affected daily functioning and prevented them from providing optimal care (Aarabi et al. 2021)
- Families revealed higher levels of stress in caregivers of younger children with ASD and those with greater severity of ASD symptoms. (Manning et al. 2021, 471 parents in Michigan)
- The most frequently reported parent challenge among 77 families with young children with intellectual and developmental disabilities (predominately Latinx male comorbid ASD) at 55.8%, was being stuck at home and unable to leave (Loma Linda, Cal State Fullerton, and Univ. of Oregon (Neece et al 2020))
- UCLA and UC Riverside Primary Care and LEND clinics survey of Covid 19 impacts
 - 70.6% child behavior difficulties
 - 64.7% mental issues
 - 58.8% physical issues
 - 52.9% childcare issues
 - 41.2% financial issues





Covid 19 and Autism

- Parents (254) of young children (2.5-6 yrs) reported a significant increase in stereotypic, self-injurious, compulsive, and ritualistic behavior, and restricted interests after Covid restrictions (Belgium, Boterberg et al. 2022)
 - Co-occurrence of language impairment or intellectual disability was associated with more behaviors
- Most parents (122) of children (3 to 18)reported their child experienced negative behavioral changes, including regression in skills, increased or new maladaptive behaviors, and increased mood symptoms (Arizona, Staidheim, et al. 2022)

 Children under the age of 5 had the most severely disrupted services and the lowest reported benefit of telehealth adaptation.
 (Casey White et al. 2021, 3,502 caregivers)

Caregivers reported worsening ASD symptoms and family distress

| Psychological Distress | US Parents | Parents of autistic child |
|--------------------------------|------------|---------------------------|
| Anxious | 45% | 65% |
| Depressed | 22% | 33% |
| Lonely | 15% | 28% |
| Hyperarousal | 9% | 25% |
| Overall psychological distress | 25% | 48% |

March – April 2020, 3,556 parents, Kalb et al. 2021



Parental Stress, Parent Functioning and Child Functioning

- Families with children under five from lower-income households, single-parent families, Black households as well as young children with disabilities experienced the largest increases in emotional or behavioral problems (US DHHS, 8/21)
 - Closure of ECE services plus material hardships negatively affected caregiver well-being which had an adverse effect on the emotional and behavioral health of young children
- Survey (1,000 parents) found a significant relationship between parents' perceptions of Covid psychological impacts and their experiences of parental burnout which both predicted greater stress and fewer positive behaviors in children (Kerr et al. 2021)
 - Association between parents' Covid 19 psychological impacts and children's stress varied based on income, significant only at lower income levels
- Global scoping review among 95 studies found (Kotlar et al. 2021)
 - Severe increases in maternal mental health, clinically relevant anxiety and depression
 - Spike in domestic violence reports
 - Decrease in prenatal care visits



In CA in first 2 quarters of 2020 there was a 14.3% drop in the overall number of child protection reports, however, there was a 25% increase in the proportion of reports with allegations of domestic violence. (Rebbe et al. 2021)





Stress Contagion and Trickle-Down Effect of Stress on Behavior

- Increases in children's internalizing symptoms of stress increased from pre-pandemic to pandemic (May to August 2020) and higher levels of Covid stress were associated with increased maternal depression. *Maternal depression and children's behavior symptoms were significantly correlated.* (Doan et al 2022)
- Pandemic related stress during April 2020 through May 2020 was significantly associated with higher maternal psychological distress which was significantly associated with higher negative parenting which was significantly associated with higher child behavior problems (Shelleby et al. 2022)
- Maternal mental health among low-income first-time mothers of young toddlers predicted children's early levels of pandemic levels of adjustment problems and changes in adjustment across 6 months of the pandemic (Thompson et al. 2021)
- Disruptions to family functioning among 4-year-olds (204 families surveyed) during the pandemic predicted increases in children's maladjustment including stress and behavior problems (Fosco et al. 2021)

• Increased harsh and lax discipline predicted changes in children's maladjustment



Giving Birth during Covid was highly stressful

- Clinically significant anxiety in the range of 34-71% and clinically significant depressive symptoms in 24 to 43% among mothers who gave birth during the pandemic (Liu et al. 2022)
 - Reduced access to medication was associated with higher levels of depression and PTSD symptoms after giving birth during Covid
 - Separation from their baby for a long period after delivery was associated with higher PTSD symptoms
- Pregnant and postpartum women (160) who delivered babies from April 28 to June 30, 2020 Washington State University (3/19/21)
 - 52% worried about babies contracting Covid 19, 27% couldn't obtain healthy food, and 25% missed prenatal appointments
 - Pregnant women were more stressed than postpartum women surveyed





Maternal Stress and Depression affected Infant Brain Development

- University of Calgary (Manning et al 2022.) surveyed 8,000 women who were pregnant during the pandemic
 - Approximately half reported anxiety and one-third reported depression which was much higher than in pre-pandemic years
 - MRI imaging scan of 75 babies 3 months after birth to people who reported prenatal distress (anxiety/depression)
 - Different structural connections between their amygdala, the brain region involved in emotional processing, and their prefrontal cortex, the brain region responsible for executive functioning
 - Lower social support was a significant predictor of clinically elevated prenatal maternal distress
 - Previous small study (Lebel 2015) found a link between prenatal depression and brain connectivity in the same areas and found that in boys those brain changes correlated with aggressive and hyperactive behavior at preschool age

• Smaller subcortical volume in the right caudate was significantly related to perinatal stress (U. of Calgary Deruz Richards et al. 2021, Canadian Symposium for Computational Neuroscience 10/26-27/21)

 Volume changes to caudate nuclei are associated with more externalizing behaviors later in adolescence and increased severity of symptoms in ADHD

Anxiety affected regulatory capacity; and depression, not anxiety, affected motor development

- Among 169 women who experienced emotional stress and only had partial social support during Covid pregnancy reported higher anxiety. Postnatally anxiety was linked to the infants' regulatory capacity at 3 months (Provenzi et al. 2021)
 - Parenting stress and mother-infant bonding mediated the regulatory capacity
- Prenatal and Postpartum depression among 117 women were both significant negative predictors of infant motor ability (Papadopoulos et al. 2022)
 - Neither pre- or postnatal stress was associated with newborn motor outcomes
 - Depression both prenatally and postnatally resulted in poorer motor outcomes in low birthweight and preterm babies





Intrauterine programming and the sensitive period in fetal brain development

- Comparison between pregnant women before and during the pandemic found elevated maternal anxiety and stress in pregnant women during Covid were associated with smaller hippocampal and cerebellar volumes, decreased white matter and a delay in the development of brain folds in the fetuses (Lu et al 2022, Developing Brain Institute, Washington DC)
 - Maternal stress may disrupt neuroendocrine functions along with the development of the HPA axis and automatic nervous system
 - Changes in white matter are associated with behavioral problems in infancy and social-emotional processing, language and memory problems by school age as well as possible psychiatric conditions
- Parallel longitudinal research (same team) found that prenatal stress was negatively associated with changes to in utero brain development during the latter half of gestation and to social-emotional and cognitive performance of those infants after birth (Bayley Scales and Infnat Toddler Social and Emotional Assessment, Wu et al. 2022,)
 - Prenatal stress altered fetal cortical folding, which in turn was negatively associated with infant social-emotional and cognitive performance
 - Prenatal maternal stress, anxiety, and depression were positively associated with parenting stress scores 18 months later

NICU Babies

- Covid 19 in pregnancy associated with preterm birth in California (Karasek et al. 2021)
 - Covid 19 diagnosis was associated with a 40% increase in preterm birth and a 60% increase in very preterm birth
 - In Ca. Covid 19 diagnosis rates in pregnant women increased across all ethnic groups but were disproportionately higher among Latinx, American Indian, and Native Hawaiian/Pacific Islander women and among people with public insurance.
 - Latinx mothers represented 47% of the sample and 72% of Covid 19 positive cases





NICU Babies

- Parents of 169 NICU babies in a national survey among 38 states reported extremely stressful experiences during the pandemic (Vance et al. 2021)
 - Parents reported extreme isolation and disconnection
 - Disruption to their family with almost half of families reporting only one parent was allowed into the NICU at a time
 - Concerns about child development due to lack of shared experiences and lack of visible facial expressions due to masks

Amy Rogeness https://health.choc.org/being-aparent-nicu-during-covid-19-



Global NICU experience



- 2,103 participants from 56 countries (Kostenzer et al. 2021) reported similar responses to the US study including:
- 63% of families were not allowed to be accompanied by another person in NICU and 52% did not have a support person present during the birth
- Only 10% reported that skin-to-skin (Kangaroo care) was initiated immediately after birth
- Restrictions of time allowed with their babies included 15% with none at all, 30% were permitted up to one hour
 - Research shows that the separation of parents and their newborns can impair developmental outcomes (Gale et al. 2021)

PTSD, Depression and Bonding

- Prenatal depression was the only unique predictor of impaired maternal-infant bonding after postpartum depression was controlled for. (Kornfield et al. 2021, 833 mothers)
 - ACEs, prenatal depression and anxiety, and Covid stress predicted a greater likelihood of postpartum depression
- Depression in pregnant women was associated with lower quality bonding while a higher level of anxiety was positively associated with bonding (Koire et al. 2021, 686 mothers)
- Postpartum depression was related to lower quality bonding but the anxiety was not associated. (Liu et al. 2021)
 - Covid-related grief was significantly associated with lower quality bonding but Covid-related health worries were associated with higher-quality bonding

 Higher acute stress response in birth was associated with more childbirth-related PTSD and less bonding with their infants (Mayopoulos et al. 2021, 640 mothers)

Epigenetics and Transgenerational Trauma

Covid examples

- Greater Covid-related prenatal stress was significantly associated with higher infant SLC6A4 methylation and that in turn predicted infants' temperament at 3 months. (Provenzi et al. 2022)
- Maternal hair cortisol was significantly associated with increases in maternal depressive symptoms over time. (Doan et al. 2022)
 - Changes in maternal depressive symptoms were associated with changes in children's behavior problems





Childhood psychosocial adversity

Care environment mediates stress

- Prenatal maternal stress, depression
- Postnatal caregiver unavailability/ absence (mental illness, substance abuse, death)
- Depriving environments (eg institutional care)
- Child abuse or neglect

Epigenetic changes

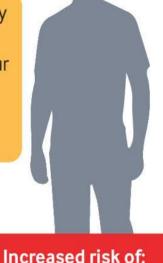
Biological change

Genetic endowment DNA methylation Genetic variants alter (eg GR promoter, susceptibilty to advesity IGF-2 antisense AVP)

• eg 5-HTTLPR, BDNF, FKBP, MAOA poly-morphisms

Developmental trajectory

 Biological change is embedded in behaviour (e.g. substance use, exercise, diet, stress management)



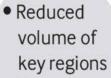
Adult outcomes

Sensitive period effects

Specific to developmental functions/domains

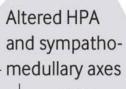


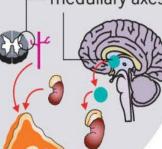
24 months



 Neurotransmitter changes

 Altered functional activity, tract connectivity





Telomere

shortening

Inflammation

Disease

Cognitive deficits

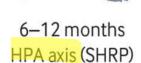
Psychopathology Social problems,

(unemployment, incarceration)

Neurodevelopmental disruption

Reprogramming of stress and immune regulatory systems

Source: Nelson et al., 2020



15 months Language

Attachment, IQ

Chaos

- National survey among 1,836 mothers of preschoolers conducted in May 2020 (Kracht et al 2021)
 - Preschoolers in <u>high-chaos households</u> (crowding, noise, and disorder in the home) had less physical activity and <u>more screen time</u> when compared to <u>low-chaos</u> households
 - Mothers who viewed routines as "less/not important" reported more preschooler screen time compared to mothers who viewed routines as "very important"
 - Preschoolers in higher chaos households had less physical activity and sleep
 - Bedtime rituals and views on routines were related to preschooler sleep and screen time despite chaos
- Maintaining a structured predictable routine in the home environment acted as a mitigating factor to adverse effects of Covid 19 stress (Glynn et al. 2021)
 - Preschoolers' depressive and externalized symptoms were elevated compared to pre-Covid levels (169 preschoolers in a predominately economically disadvantaged sample in Southern California)



28% of California babies are living in crowded housing versus the national average of 15.4% (State of Babies 2022, Zero to Three)





How disrupted were young children's daily routines?

- Systematic review found that a very high percentage of parents reported changes in daily routines including <u>increased screen time</u> and decreased physical activity which negatively influenced sleep.(Camacho-Montano et al. 2022)
 - Most parents reported an increase in sleep disturbances including anxiety at bedtime, night waking, nightmares, and involuntary movements
 - Infants and preschoolers had less regularity in their sleep routines
- Global meta-analysis found Covid created a perfect storm for "habit discontinuity" (Neville et al. 2022) and daily physical activity decreased by 20% which promoted an increasingly sedentary "new normal"
- Globally, a <u>higher proportion of children with disabilities</u> reported playing less (55 % to 44%) and sleeping less (44% vs. 12%) (Save the Children Covid 19 Hidden Impact Survey 11/21)

Another global systematic review revealed that there was a decrease in outdoor play and an increase in indoor activities, especially screentime. (Kourti 2021)

Executive functioning, Screentime and Resource Constraints

- <u>Lower executive functioning</u> skills <u>and regulation</u> were associated with screen use (prepandemic, first lockdown, subsequent lockdown among 575 8 to 36 month olds in UK) (Hendry et al.2022)
 - Previous research found that infants frequently exposed to screens as a soothing technique when they are distressed or bored may not develop their own coping mechanism (Coyne et al. 2021)
- Higher SES were <u>less likely</u> to report high infant screen use, screen use mediated the association between SES and both regulation (partially) and executive functioning skills
- Two different profiles of parent activities emerged during the two lockdown periods during the initial lockdown, lower SES families were disproportionately disadvantaged when playgrounds and libraries closed.
 - interventions to promote parent-child activities are only effective if they address the availability of time and resources (books, open play space, paid parental leave)





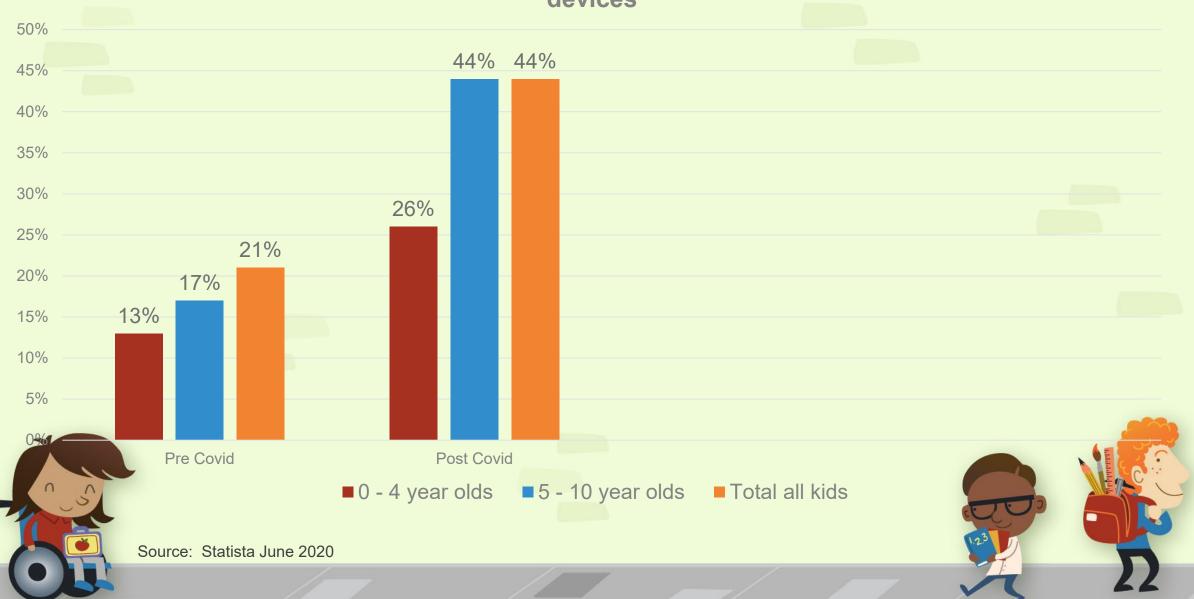
Screens as Babysitters

- Caregivers reported toddlers with no online schooling requirements were exposed to more screen time during lockdown, more screentime was negatively associated with SES (socio-economic status), caregiver screentime and attitudes towards children's screentime (2209 caregivers across 12 countries, Bergmann et al. 2022)
 - As early as 8 months some children had regular daily screentime
 - The longer caregivers were at home working from home the more screen time kids had
- Decrease in parent well-being was tied to loss of child care and increase in children's screen time was tied to loss of child care (1,000 US parents, Hartshorne et al 2021)
- Parents of preschool-aged children who didn't have childcare reported that screentime
 was associated with financial strain, food insecurity, and parent anxiety (Canada, 610
 parents, Stienwandt et al. 2021)

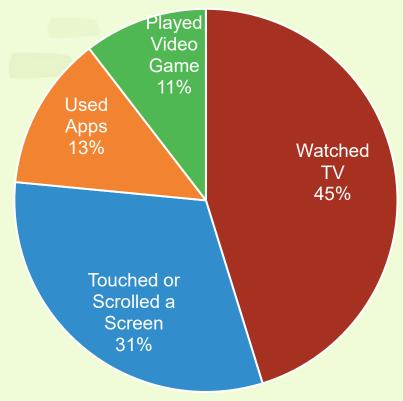




Children in the US who spent more than four hours daily using electronic devices



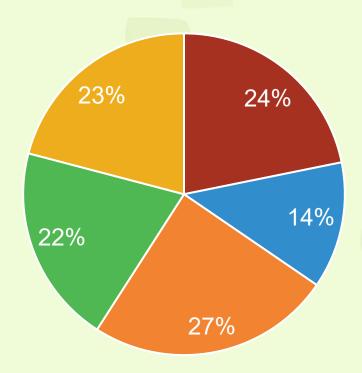
Mobile Media Device Usage in Children Younger Than 1



Source: Pediatric Academic Societies (PAS) annual meeting, Hilda Kabali, 8/1/2019



Daily Screentime Use by US Children 0 to 8 years old in 2020



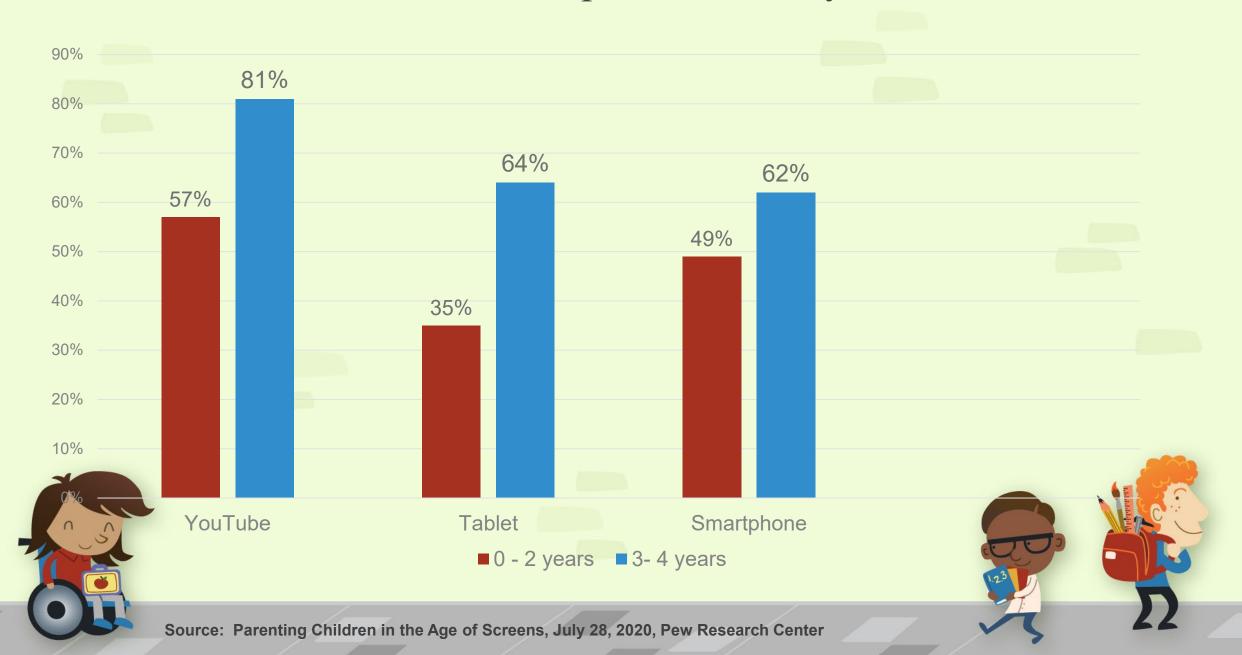
■ More than 4 hours ■ 2 to 4 hours

■ Less than 1 hour ■ None

■ 1 to 2 hours



YouTube, Tablets and Smartphones, Oh My!



Screentime did not necessarily increase due to educational use

- Young children are primarily watching entertainment (YouTube), not educational content as only 5% of videos had high educational value (2020 Common Sense Media analysis of 1,639 YouTube Videos watched by 0 to 8-year-olds between 3/26/20 to 4/1/20)
 - Advertising occurs in 95% of early childhood videos
 - 1 in 5 videos contained ads that were not age appropriate
 - Almost half featured products for kids to buy
 - 27% of those watched are intended for older audiences
 - 30% contained at least mild violence
 - 3 in 4 were missing any diverse representation and positive role models



Parents think they are providing educational content: 72% say media helps their child learn and among younger children 83% are satisfied with the quality of educational material their 2 to 4 year olds watch



Now What...

- Find children who <u>missed their screenings</u>, ensure majority of kids are being screened especially our most vulnerable kids and choose your tools wisely
 - ASQ found to be "poor" across replicated research for sensitivity in identifying young children with language delays, worse the younger they are and particularly poor for bilingual children (Berkman et al. 2015, So & To 2022, Wilson et al. 2022)
 - MCHAT found to have poor sensitivity, especially for children of color, girls and those from lower income households (Guthrie et al. 2019, Oosterling 2009)
- Share with parents that the most important thing they can do for brain development and language is work on <u>reciprocity</u> (Serve and Return)
- Have discussions about the importance of <u>routines</u> for child development
- Educate parents about <u>screen time</u>, sharing information is not the same as mom shaming
- Start talking and training families about <u>literacy early</u>, don't wait until preschool
- Think outside the box about what families need respite, social skills, and social support
- Support mothers earlier, <u>prenatally</u>, while in the <u>NICU</u>
- Pay attention to sensitive and critical periods in development
- Remember the inequity in how Covid affected families in California



PUBLIC INPUT

Public Input Guidelines

- All comments are published as part of the public record and provided to ICC members
- EACH PERSON HAS 2 MINUTES TO COMMENT

We want t make sure there's time to hear from everyone. Longer comments? Submit them in writing to ensure your full message is shared

One person is welcome to share input from others, please just be mindful of time, summarize key points and turn in any written statements

- IF YOU WANT TO SPEAK, SIGN IN
 Signing in allows us to call on you when it is time for public comment
- A clear statement-including specific suggestions for addressing any concerns you may have- is most helpful
- WANT TO SHARE A POWERPOINT OR VIDEOS AS PART OF YOUR PUBLIC COMMENT?

Email <u>EarlyStart@dds.ca.gov</u> at least 14 days in advance with any audio/visual needs

LUNCH

Subcommittee Composition and Goals

DJ Tomko

Subcommittee Composition and Goals

MEETING FACILITATION

The subcommittee meetings will be held in two separate rooms with two separate Zoom links, which are accessible via the main Zoom session chat

GOALS

The subcommittee chair and members will review agenda items and develop action items to propose to voting members

MEETING MINUTES

At least one representative from WestEd and DDS will be present in subcommittee break out rooms to track meeting notes and public comment

PUBLIC COMMENT

Within the subcommittee meetings, there will be designated time allotted for public input

ICC Subcommittee Meetings

- Improving Systems
 - Communications

CONTACT INFO

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DDS Early Start Webpage:

<u>Early Start - CA Department of Developmental Services</u>

ICC Webpage
State ICC on Early Intervention
Overview

